SANTA CRUZ BIOTECHNOLOGY, INC.

DHS (D-11): sc-376798

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Deoxyhypusine synthase (DHS) is crucial for the post-translational formation of hypusine, a modification of a specific lysine residue in eukaryotic initiation factor 5A (eIF-5A). Hypusine is formed by posttranslational modifications involving two enzymatic steps catalyzed by DHS and deoxyhypusine hydroxylase (DOHH). eIF-5A is essential for eukaryotic cell proliferation. Deoxyhypusine synthase, which belongs to the deoxyhypusine synthase family of proteins, is important for the first step in the hypusine biosynthesis pathway. It acts as a catalyst for the NAD-dependent oxidative cleavage of spermidine and the ensuing transfer of the butylamine moiety of spermidine to the eIF-5A protein, to create the intermediate deoxyhypusine residue.

REFERENCES

1. Huang, J.K., et al. 2004. Molecular cloning of bovine eIF5A and deoxyhypusine synthase cDNA. DNA Seq. 15: 26-32.
2. Xu, A., et al. 2004. Identification of mRNA that binds to eukaryotic initiation factor 5A by affinity co-purification and differential display. Biochem. J. 384: 585-590.
3. Sommer, M.N., et al. 2004. Screening assay for the identification of deoxy-hypusine synthase inhibitors. J. Biomol. Screen. 9: 434-438.
4. Molitor, I.M., et al. 2004. Translation initiation factor eIF-5A from *Plasmodium falciparum*. Mol. Biochem. Parasitol. 137: 65-74.
5. Umland, T.C., et al. 2004. A new crystal structure of deoxyhypusine synthase reveals the configuration of the active enzyme and of an enzyme.NAD.inhibitor ternary complex. J. Biol. Chem. 279: 28697-28705.
6. Huang, J.K., et al. 2004. Higher activity of recombinant bovine deoxyhypusine synthase vs. human deoxyhypusine synthase. Protein Expr. Purif. 35: 32-38.
7. Hauber, I., et al. 2005. Identification of cellular deoxyhypusine synthase as a novel target for antiretroviral therapy. J. Clin. Invest. 115: 76-85.
8. Nishimura, K., et al. 2005. Independent roles of eIF5A and polyamines in cell proliferation. Biochem. J. 385: 779-785.
9. Park, J.H., et al. 2006. Molecular cloning, expression, and structural prediction of deoxyhypusine hydroxylase: a HEAT-repeat-containing metalloenzyme. Proc. Natl. Acad. Sci. USA 103: 51-56.

CHROMOSOMAL LOCATION

Genetic locus: DHPS (human) mapping to 19p13.2; Dhps (mouse) mapping to 8 C3.

SOURCE

DHS (D-11) is a mouse monoclonal antibody raised against a peptide mapping near the N-terminus of DHS of human origin.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PRODUCT

Each vial contains 200 µg IgG_3 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-376798 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

DHS (D-11) is recommended for detection of DHS of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

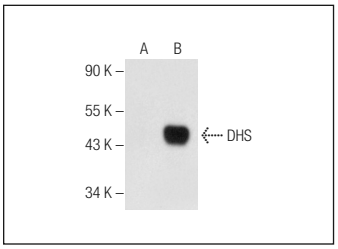
DHS (D-11) is also recommended for detection of DHS in additional species, including canine and porcine.

Suitable for use as control antibody for DHS siRNA (h): sc-60535, DHS siRNA (m): sc-60536, DHS shRNA Plasmid (h): sc-60535-SH, DHS shRNA Plasmid (m): sc-60536-SH, DHS shRNA (h) Lentiviral Particles: sc-60535-V and DHS shRNA (m) Lentiviral Particles: sc-60536-V.

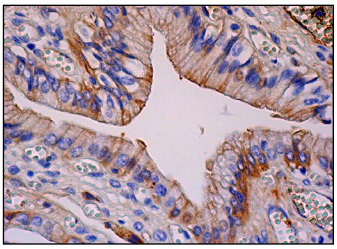
Molecular Weight of DHS: 40 kDa.

Positive Controls: DHS (h): 293T Lysate: sc-177128.

DATA



DHS (D-11): sc-376798. Western blot analysis of DHS expression in non-transfected: sc-117752 (**A**) and human DHS transfected: sc-177128 (**B**) 293T whole cell lysates.



DHS (D-11): sc-376798. Immunoperoxidase staining of formalin fixed, paraffin-embedded human gall bladder tissue showing membrane and cytoplasmic staining of glandular cells.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.